

**Abstract**

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1. Coating composition for electrical conductors, containing

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- A) 1 wt.% to 60 wt.% of one or more reactive nanomers based on an element-oxygen network with elements of the series comprising aluminium, tin, boron, germanium, gallium, lead, the transition metals, the lanthanides and actinides,
- B) 0 wt.% to 90 wt.% of one or more conventional binders, and
- C) 0 wt.% to 95 wt.% of one or more conventional additives, solvents, pigments and/or fillers,

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wherein the reactive nanomer of component A is based on the element-oxygen network, on the surface of which reactive functions  $R_1$  and optionally non-reactive and/or partially reactive functions  $R_2$  and  $R_3$  are bound by way of the oxygen of the network,

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$R_1$  being contained in an amount up to 98 wt.%,  $R_2$  and  $R_3$  in an amount from 0 wt.% to 97 wt.% in the nanomer according to the invention, in which

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$R_1$  represents radicals of the metal acid esters; NCO; urethane groups, epoxide groups, epoxy, carboxylic acid anhydride; C=C double bond systems; OH; alcohols bound by way of oxygen, esters, ethers; chelating agents; COOH;  $NH_2$ ,  $NHR_4$ ; and/or reactive resin components;

$R_2$  represents radicals of aromatic compounds, aliphatic compounds, fatty acid derivatives; esters and/or ethers,

$R_3$  represents resin radicals,

$R_4$  represents radicals of acrylate, phenol, melamine, polyurethane, polyester, polyester imide, polysulfide, epoxide, polyamide, polyvinyl formal resins; aromatic compounds, aliphatic compounds; esters; ethers, alcoholates, fats,

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or chelating agents.

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